METRIC

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DEPARTMENT OF DEFENSE

INTERFACE STANDARD

SYMBOLS FOR ARMY SYSTEMS DISPLAYS (METRIC)

AMSC N/A AREA HFAC

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited

FOREWORD

1. This military standard is approved for use by the U.S. Army Missile Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

2. Role modifiers for symbols presented herein, for the most part, use those being proposed in draft revisions of FM-101-5 and NATO STANAG 2019 known as APP 6, Change 2. Some minor changes have been made to correct a few inconsistencies.

3. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Missile Command, ATTN: AMSMI-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5270 by using the Standardization Document Improvement Proposal (DD Form 1426) at the end of this document or by letter.

CONTENTS

PARAGRAPH PAGE

PARAGRAPH PAGE

FIGURES

TABLES

PARAGRAPH PAGE

1. SCOPE

1.1 Scope. This standard prescribes the physical characteristics of ground and air track symbols, unit/installation symbols, control measures symbols, equipment symbols, and associated alphanumeric information for U.S. Army Combined Arms system displays which are generated by electronic, optic, or infrared technology and presents information in real time or near-real time.

1.2 Purpose. Requirements are specified herein for the selection and depiction of symbols which provide U.S. Combined Arms personnel with track, mission, and status information.

1.3 Application. This standard applies to the design of all U.S. Army Combined Arms system displays and shall be tailored as required to meet individual system requirements. These systems include: Air Defense, Aviation, Armor, Infantry, Fire Support, Intelligence, and Logistics. The symbols presented herein are intended for application to high quality, calligraphically written cathode-ray tube displays. This standard also applies to flat-panel and optical type displays if the provisions are modified to ensure that image quality provides legible symbols, modifiers and alphanumerics. This standard does not apply to existing systems, unless system product improvement program (PIP) involving the system displays is undertaken.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, and 5 of this standard. This section does not include documents cited in other sections of this standard or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3, 4, and 5 of this standard, whether or not they are listed.

2.2 Government documents.

2. 2.1 Specifications , standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issue of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-1472	-	Human Engineering Design Criteria for Military Systems, Equipment, and Facilities
MIL-STD-1787	-	Aircraft Display Symbology

HANDBOOKS

DEPARTMENT OF DEFENSE

MIL-HDBK-1908 - Definitions of Human Factors Terms

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 09111-5094).

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. DEFINITIONS

Except as noted below, the terms used in this standard are defined by MIL-HDBK-1908.

3.1 Installation. Any military systems of personnel and equipment set up for specific tactical operations.

3.2 Point. The map locations (coordinates) of specific military operations.

3.3 Symbol. A geometric form, alphanumeric information, or combination thereof, used on a display or map to identify, define, and distinguish a specific military track, unit, installation, force operation, battlefield geometry, and status information in real time.

3.4 Symbol modifier. Markings used to define dynamic, real-time changes in symbol information, e.g., speed and heading vector for an air track. Also used to define the specific function of a unit and installation.

3.5 Track. A graphic symbol, along with applicable symbol modifiers, of any space, air, land, surface, or sub-surface vehicle which has been detected and processed by a sensor system and electronically displayed, in real time.

3.6 Unit. Any military element of personnel and equipment whose structure is prescribed by competent authority, specifically, part of an organization.

4. GENERAL REQUIREMENTS

4.1 Standardization. Symbols used in the U.S. Army systems shall be consistent and uniform for common functions where symbols are used to display functions for the soldier-machine interface. Such Army systems include: Maneuver Control, Air Defense, Air Support, Intelligence and Electronic Warfare, and Combat Service Support, plus those systems used in the command, control, and interoperability of the battlefield systems.

4.2 Symbol categories. Symbols defined in this standard are presented and utilized in two tactical operational categories: engagement operations and force operations. Symbols for engagement operations shall use shape coding for identification and symbols for force operations shall use an alpha designator for identification. Color coding shall be used as a redundant method for both engagement and force operations symbols.

4.3 Basic symbol design. Unless otherwise required by operational consideration, symbol shapes shall use open rather than filled structures (e.g., “O” rather than “•”) to provide space for effective integration of various modifiers.

5. DETAILED REQUIREMENTS

5.1 System coding. Where visual discrimination between signals may be critical to human and system performance, symbols shall be appropriately coded. Coding techniques shall include shape, line structure, modifier, blinking, reverse video, and color. A symbol luminance of not less than 0.34 cd/m^2 and a luminance contrast ratio of not less than 0.88 should be maintained. Symbols should be designed for use from a viewing distance of not more than 0.5m.

5.1.1 Symbol shapes and modifiers.

5.1.1.1 Tactical engagement operations applications.

5.1.1.1.1 Basic tracks. Basic track symbol shapes shall conform to Table I.

5.1.1.1.2 Track modifiers. Standard modifiers to track symbols shall conform to Table II. Modifiers to track symbols include multiple tracks, engageable or

unengageable, and speed and heading vectors. A common meaning and location discipline shall be used across display modes and symbol modifier applications.

5.1.1.1.3 Landmark symbols. Landmark symbols which aid an operator to correlate a visually detected track to a graphically displayed track shall conform to Table III.

5.1.1.1.4 Special symbols. Special symbols associated with the display of engagement symbols, tabular information, and ground fire planning shall conform to Table IV.

5.1.1.1.5 Symbol and modifier activation. No more than two sequential key actions shall be required to activate basic classes of symbols and symbol modifier categories.

5.1.1.2 Tactical force operations applications.

5.1.1.2.1 Units and installations symbols.

5.1.1.2.1.1 Basic units and installations. Symbols for basic units and installations, including coding modifiers for current and future locations and identification, shall conform to Table V.

5.1.1.2.1.2 Fields. Fields that provide essential information in the form of graphic modifiers, alphanumerics, and abbreviations shall be located outside the basic unit and installation symbols. Fields shall be oriented around the basic symbol as shown in Tables VI and VII. No more than 12 fields shall be used.

5.1.1.2.2 Unit role modifiers. These modifiers shall be used inside the basic unit symbol and shall conform to Table VIII. Role modifiers shall be displayed continuously with the unit symbol.

5.1.1.2.3 Installation role modifiers. These modifiers shall be used inside the basic installation symbol and shall conform to the following tables for the applications indicated:

Table IX:	Collecting
Table X:	Electronic
Table XI:	Logistic supply
Table IX:	Other logistic

5.1.1.2.4 Control measures. Symbols for control of Army forces are separated into three major categories: Ground Environment, Air Environment, and Special.

5.1.1.2.4.1 Ground environment. Symbols for the ground environment shall conform to the following tables for the applications indicated:

Table IX: Control points
Table XIV: Control lines
Table XV: Control areas
Table XVI: Control routes
Table XVII: Control movements
Table XVIII: Crossings
Table XIX: Demolitions, point and linear obstacles

5.1.1.2.4.2 Air environment. Symbols for the air environment shall conform to the following tables for the applications indicated:

Table XX: Control points
Table XXI: Control lines
Table XXII: Control areas
Table XXIII: Control routes

5.1.1.2.4.3 Special. Symbols for other special applications shall conform to the following tables for the applications indicated:

Table XXIV: Mines and mine fields.
Table XV: Nuclear, biological, and Chemical (NBC)

5.1.1.2.5 Ground equipment. If required, symbols for individual ground equipment items, including aircraft, shall be displayed/presented only when such equipment is stationary; i.e., in a non-track status. When items of ground equipment start to move and are detected by a sensor, they shall be displayed as land-track symbols in accordance with Table I. A capability should be provided to allow an operator to hook (select) any land track as well as other tracks and display track-amplifying information (including type of equipment) in an auxiliary display readout area or window. Symbols for stationary ground equipment shall conform to Table XXVI through Table XXX.

5.1.1.3 Aircraft symbology. See applicable provisions of MIL-STD-1787.

5.1.2 Line structure. Not more than six different line structures shall be used to display battlefield geometry. Those selected shall allow for maximum contrast and discrimination. The line structures shall conform to Figure 1. Line structure utilization shall also conform to the track unit, installation, equipment, and control measure symbols in Tables I through XXX.

5.1.3 Blinking.

5.1.3.1 Track symbols and modifiers. A capability for track symbols and associated track modifiers to blink in response to certain conditions and to discontinue blinking when the conditions no longer exist, or when appropriate operation action is taken, shall be provided. Only the track symbol and associated modifiers shall blink. The alphanumeric data associated with the track symbol shall not blink.

5.1.3.2 Rate. No more than two blink rates shall be used. Where only one rate is used, the rate shall be not less than 4 nor more than 5 Hz. When two rates are used, the second rate shall be no less than 1 nor more than 2 Hz.

5.1.3.3 Application. The higher blink rate shall normally be used as the highest priority track indicator on tracks which require urgent operator attention (e.g., rack recommended for engagement by the system, identification conflict, pop-up engageable hostiles). Only one system at a time shall be blinked at the higher rate. The lower blink rate, if required, shall be used for alerting operator to a single class of less urgent tracks (e.g., a new hostile or unknown track entering the operator's area of interest). Only one symbol at a time shall be blinked at the lower rate.

5.1.3.4 Non-track symbols. Blinking of symbols for ground units, installations, equipment, and control measures shall be blinked at the lower rate and shall indicated an updated or new location or status. Only one symbol at a time shall be blinked. Where units and tracks are simultaneously displayed, the blinking of a track takes precedence. Alphanumeric data shall not be blinked.

5.1.4 Hooking. Hooking action shall be displayed by reverse video, brackets, or a box. Irrespective hooking method, only one symbol at a time shall be capable of being hooked.

5.1.4.1 Reverse video. If possible, normally light symbols (and modifiers) on a dark background shall be capable of being switched to dark symbols (and modifiers) on a light background (or vise-versa).

5.1.4.1.1 Application. A symbol may be depicted in reverse video in response to certain conditions. Reverse video shall be used to indicate that a symbol has been selected by the operator to receive further action (e.g., selected (hooked) to access more information on a track or unit). When the conditions no longer exist or upon termination of the action, the symbol background polarity shall return to normal.

5.1.4.1.2 Shape. When reverse video is used, the display area affected shall be in the shape of a square surrounding the basic symbol and associated modifiers on all sides by at least one stroke width of a line.

5.1.4.2 Brackets. If a capability to depict symbols in reverse video is not provided, brackets ([ ]) shall be used as an alternative to indicate that a symbol has been selected.

5.1.4.3 Box. A modifier in the shape of a square box surrounding the basic symbol is also acceptable as an alternative to reverse video or brackets.

5.1.5 Color.

5.1.5.1 Use. In order to maintain monochrome CRT compatibility and enhance the primary shape coding, color shall be used as a redundant coding scheme. To maintain good color perception, color symbol luminance should be at least 3 cd/m^2. A luminance ratio of not less than 5:1 and not more than 10:1 should be maintained for color displays. To maintain the integrity of display symbol color coding and minimize adverse visual effects that might result from red (dark adapted state) or blue-green lighting, which ambient illumination of the crew workspace should be used. For workspaces providing other than white illumination, colors or display symbols may be modified to allow efficient operator discriminability.

5.1.5.2 Color scheme. The color specified refers to a class of hues, not to a specific wave length. The hues used should maximize the color contrast. The display should have a dark background to maximize the visibility and discrimination of the colors. Application of color to Army symbology shall conform to the following:

a. Red - Used to depict hostile ground units, installations, equipment, ground and air environment control measures), and track symbols, plus any battlefield geometry representing danger zones.

b. Yellow - Used to depict unknown ground units, installations, equipment, and track symbols, and induced nuclear, biological, or chemical contamination areas.

c. Green - Used to depict friendly ground units, installations, equipment, ground and air environments (control measures), and track symbols, plus any battlefield geometry representing safe zones.

d. Cyan - Used to depict neutral ground units, installations, equipment, ground and air environments (control measures), and track symbols.

e. White - Used to depict alphanumeric data, status information, and other battlefield geometry; e.g., boundary lines.

f. Blue - Should not be used except where conditions require a fifth color to depict non-critical information, and where the use of blue provides adequate contrast with the display background for required legibility.

5.1.6 Symbol overlap. When symbols used to depict zones or areas overlap, the underlying lower priority areas which are covered by the highest priority area shall use a dashed-line structure. Overlapping track symbols shall not result in any track symbol blanking or line structure change. Preservation of all track symbols is essential

so that the operator can realize that multiple tracks exist. A capability should be provided to allow an operator to zoom-in or change scale in order to gain more separation of track symbols.

5.2 Size

5.2.1 Symbol size. The following equation shall be used to calculate the size of symbols and alphanumerics specified below: Symbol height = Tangent (viewing angle subtended) x (viewing distance). For example, at the minimum recommended viewing distance of 50 cm, a single friendly track should have a diameter of 3.7 mm (see figure 2).

5.2.1.1 Local tracks. The major or vertical dimension of a single local track symbol shall subtend a visual angle of not less than 7.3 mrad of arc nor more than 10.2 mrad of arc when measured from the operator's eye in its normal viewing location. The horizontal bar (line) denoting a rotary wing aircraft track shall have the same length and the width of a single track symbol. The values, stated for local and remote tracks and also for unit, installations, control points, and equipment (5.2.1.3 through 5.2.1.6) are for symbol luminances which are above 0.35 cd/m^2 and symbol-to-background luminance contrast of not less than 0.88 ($L_1 - L_2 / L_1$) as defined by MIL-HDBK 1908).

5.2.1.2 Remote tracks and alphanumeric data. The major or vertical dimension of the basic track symbol for a single remote track and the height of alphanumeric characters shall subtend a visual angle of not less than 4.7 mrad of arc nor more than 6.6 mrad of arc when measured from the operator's eye in its normal viewing location. When a system is receiving only remote track information, an optical capability should be provided to automatically increase the size of the remote track symbols to the size of the local track symbols. Also, when remote tracks correlate with local racks, only the local track symbols shall be displayed.

5.2.1.3 Ground units. The vertical dimension of a ground unit symbol shall subtend a visual angle of not less than 10.6 mrad or arc nor more than 12.0 mrad of arc when measured from the operator's eye in its normal viewing location.

5.2.1.4 Ground installations. The major or vertical dimension of a ground installation symbol shall subtend a visual angle of not less than 2.0 mrad of arc nor more than 14.0 mrad of arc when measured from the operator's eye in its normal viewing location.

5.2.1.5 Control points. The major dimensions of all control points shall subtend a visual angle of not less than 14.0 mrad of arc nor more than 16.0 mrad of arc when measured from the operator's eye in its normal viewing location.

5.2.1.6 Equipment. The major dimension of equipment symbols shall subtend a visual angle of not less than 7.3 mrad of arc nor more than 16.0 mrad of arc when measured from the operator's eye in its normal viewing location. The size stated is for equipment symbols used independently and not integrated with unit or installation symbol. When equipment symbols are integrated with unit or installation symbols, the equipment symbols should be sized to fit into the unit or installation symbol.

5.2.1.7 Multiple tracks. The symbol formed by the inner line shall be the same size as the single track symbol. The outer line shall be separated from the inner line by no less than one stroke width of the line.

5.2.1.8 Landmark symbology. The major dimension of the landmark symbol shall subtend a visual angle of not less than 7.3 mrad of arc nor more than 10.2 mrad of arc when measured from the operator's eye in its normal viewing location.

5.2.2 Symbol width.

5.2.2.1 Track symbols. The width-to-height ratio of the basic track symbols depicted in Table I shall be 1:1.

5.2.2.2 Ground unit symbols. The width-to-height ratio of ground unit symbols depicted in Table V should be approximately 3:2.

5.2.2.3 Installation symbols. The width-to-height ratio of installation symbols depicted in Table V shall be 1:1.

5.2.2.4 Control points and equipment symbols. The width-to-height ratio of control points and equipment symbols depicted in Tables XIII, XX, and XXVI should be approximately 2:3.

5.2.3 Symbol stroke width. The stroke width-to-height ratio of light symbols on a darker background should be not less than 1:6 nor more than 1:10, inclusively The stroke width-to-height ration of dark symbols on a brighter background should be not less than 1:6.

5.2.4 Lines.

5.2.4.1 Line width. The basic line width used to compose battlefield geometry symbols shall subtend a visual angle of not less than 1.2 mrad of arc when measured from the operator's eye in its normal viewing location. The equation shown in 5.2.1 may also be used to determine the appropriate line width, substituting line width for symbol height.

5.2.4.2 Line brightness.

5.2.4.2.1 Levels. No more than two brightness levels shall be used.

5.2.4.2.2 Brightness categories. Track symbols with their modifiers and alphanumeric data shall be displayed at a higher brightness level than ground units, installations, control measures, and equipment symbols when simultaneously displayed.

5.2.4.2.3 Illuminance compatibility. Symbol brightness (luminance) shall be compatible with the operator's visual tasks and illuminance environment.

5.2.4.2.4 Brightness control. Operator control of symbol brightness should be provided. Where such a control is provided, it should differentially dim the two brightness levels so that the brightness ratio between them is relatively constant. If the display is to be used in an area with controlled ambient lighting, the minimum adjustment of the lower level shall be capable of providing display legibility under the highest ambient lighting anticipated. A continuously variable rather than discrete control shall be provided.

5.2.4.3 Line structure. Not more than six kinds of line structure coding shall be used to display symbols. Those selected shall not preclude attaining required contrast and discrimination and shall conform to Figure 1.

5.2.5 Intercharacter spacing. The horizontal separation between alphanumeric characters shall be from 20 to 50 percent of the character width.

5.3 Track, ground unit, and installation identifiers.

5.3.1 Track identifier location. The first character of the track identifier shall be located in the second data space to the right of a target symbol, as shown in Figure 3.

5.3.2 Ground unit and installation identifier location. The ground unit and installation identifiers shall be located as specified in Table VI.

5.3.3 Content. Integration of air track, map and ground unit symbology should be displayed as shown by an air defense system display example given in Figure 4.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This standard is intended to specify requirements and guidelines for selection and use of symbols for depicting essential information in Army system displays.

6.2 Issue of DODISS. When this standard is used in acquisition, the applicable issue of the DODISS must be cited in the solicitation (see 2.1.1).

6.3 Subject term, (key word) listing.

Brightness
Coding
Modifiers
Shape
Size

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

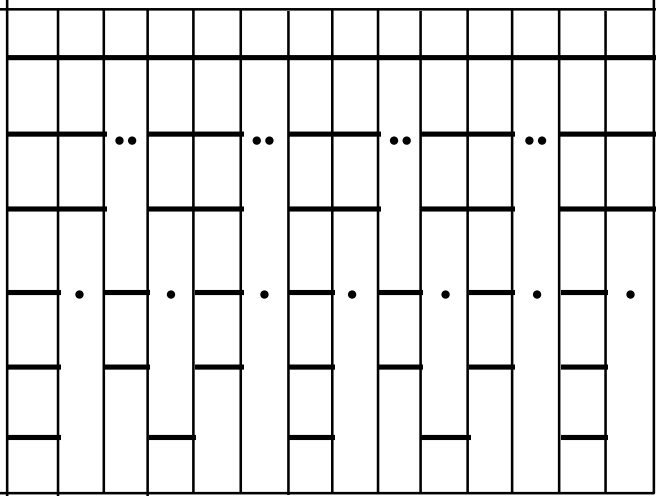
LINE CODING	EXAMPLES AND APPROXIMATE SPACINGS
SOLID	
LONG DASH - TWO DOTS	
LONG DASH - SHORT SPACE	
SHORT DASH - ONE DOT	
SHORT DASH - SHORT SPACE	
SHORT DASH - LONG SPACE	

FIGURE 1. Line structure coding

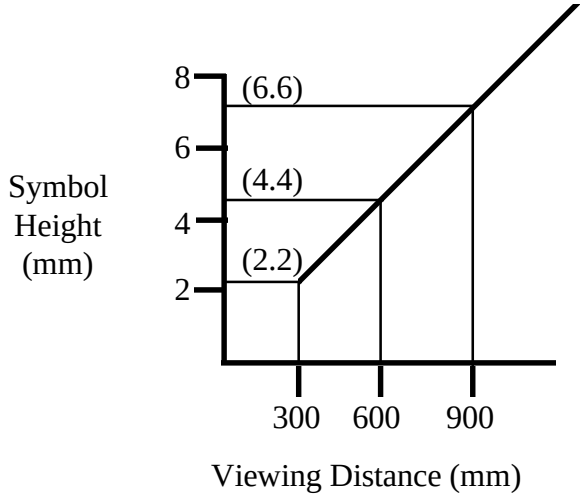


FIGURE 2. Single local track symbol height required for various viewing distances.

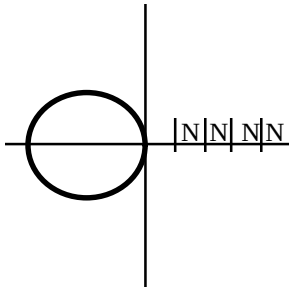


FIGURE 3. Track identifier location.

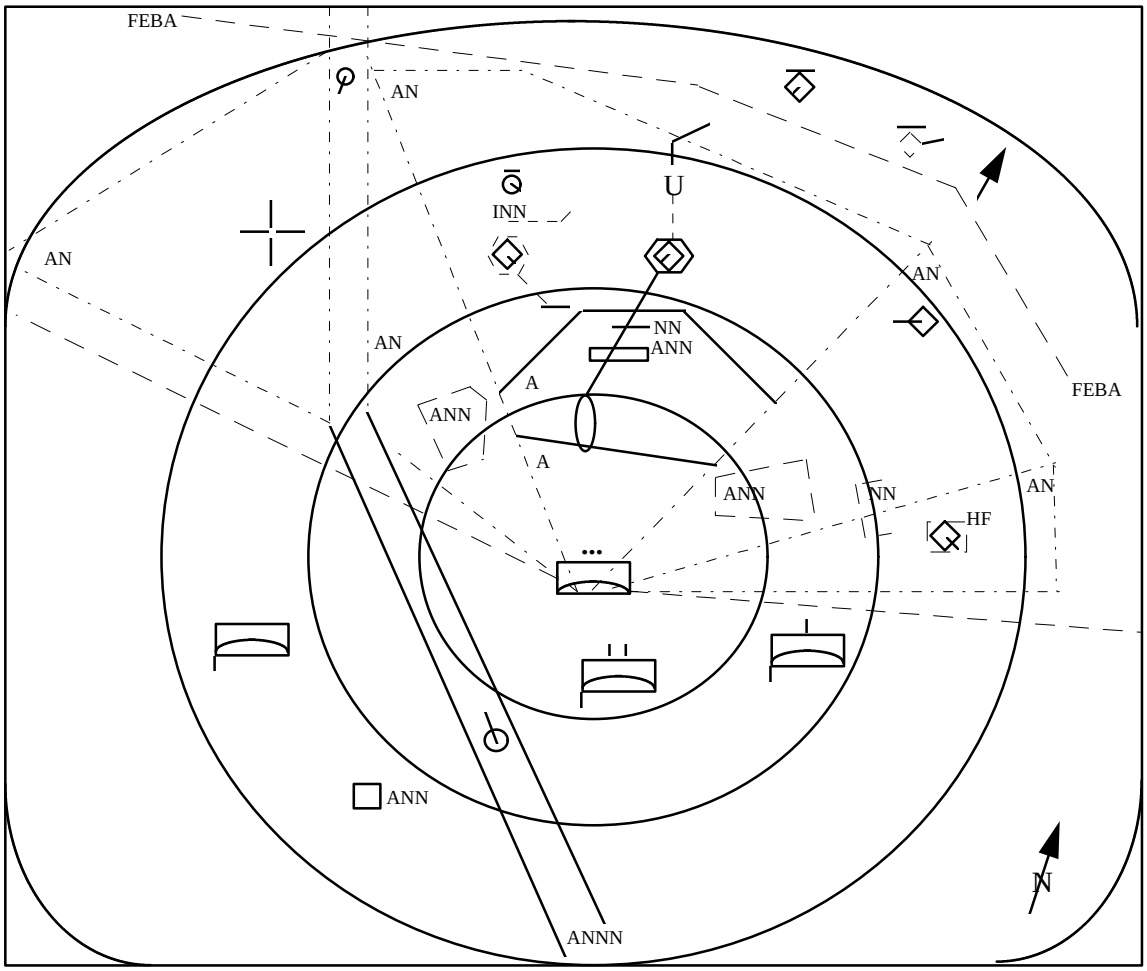


FIGURE 4. Example of an air defense system PPI display showing integration of symbols.

TABLE I. Basic Graphic Track Symbols

SYMBOL NAME	SYMBOL SHAPE	
HOSTILE AIR/SPACE TRACKS	ENGAGEABLE	UNENGAGEABLE
Fixed Wing (FW)		
FW Unmanned Aerial Vehicle (UAV)		
Rotary Wing (RW)		
RW Unmanned Aerial Vehicle (UAV)		
Tactical Air-to-Surface Missile (TASM)		
Cruise Missile (CM)		
Tactical Ballistic Missile (TBM)		
Satellite		
UNKNOWN AIR / SPACE TRACKS		
FW		
FW UAV		
RW		
RW UAV		
Satellite		

TABLE I. Basic Graphic Track Symbols - (continued)

SYMBOL NAME	SYMBOL SHAPE
FRIENDLY AIR / SPACE TRACKS	UNENGAGEABLE
FW	
FW UAV	
RW	
RW UAV	
Surface to Air Missile (SAM)	
Cruise Missile (CM)	
Satellite	
NEUTRAL AIR / SPACE TRACKS	
FW	
FW UAV	
RW	
RW UAV	
SAM	
CM	
Satellite	

TABLE I. Basic Graphic Track Symbols - (continued)

SYMBOL NAME	SYMBOL SHAPE ENGAGEABLE*
HOSTILE LAND TRACK **	
Hostile Surface Track	
Hostile Subsurface Track	
Suspect Hostile	
UNKNOWN LAND TRACK	
Unknown Surface Track	
Unknown Subsurface Track	
Pending Unknown	
FRIENDLY LAND TRACK	
Friendly Surface Track	
Friendly Subsurface Track	
Assumed Friend	
NEUTRAL LAND TRACK	
Neutral Surface Track	
Neutral Subsurface Track	

TABLE I. Basic Graphic Track Symbols - (continued)

*Note: Unengageable tracks are depicted by a dashed-line structure of the basic symbol as shown in table I.

**Note: Track symbols and their modifiers are not tied to any specific BFA. All Army systems capable of displaying tracks shall use these symbols. Also, when role modifiers or icons are used within the track symbol, the horizontal lines for land, surface and subsurface tracks shall be located outside instead of inside the symbol frame.

Unengageable status. In table I, the unengageable status of a track indicates that a track cannot be engaged if one or both of the following conditions exist:

a. The track is beyond the effective engagement range of the weapon system.

b. The track is not to be engaged based on the current Weapons Control Order or Rules of Engagement.

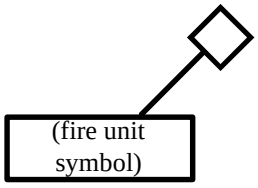
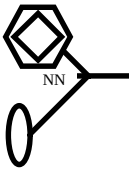
Friendly and neutral tracks are never engageable; therefore, symbols are displayed using solid-line structure only. It is also assumed that most systems have a capability to change the track identification.

TABLE II. Graphic Track Symbol Modifiers

SYMBOL NAME	SYMBOL SHAPE	REMARKS
Multiple Engageable Air Track		Used with all track symbols when two or more tracks are located in close proximity to each other traveling in the same general direction and at similar speeds. The symbol formed by the inner line shall be the same size as the single track symbol. The outer line shall be separated from the inner line by one stroke width of the line.
Single Engageable Air Track		All hostile and unknown track symbols shall be displayed by a solid line structure when such tracks are or become engageable.
Single Unengageable Air Track		All hostile and unknown track symbols shall be displayed by a dashed line structure when such tracks are or become unengageable for any reason.
Multiple Unengageable Air Track		Same as single, unengageable air tracks.
Engaged Air Track (Single)*		Indicates that a target is under engagement by a fire unit. The vertical dimension of this modifier shall susubtend a visual angle of not less than 12 mrad of arc. The modifiers shall be centered on the basic air track symbol.
To-Be-Engaged Air Track*		Indicates that a target has been assigned for manual or automatic engagement. The vertical dimension of this modifier shall be the same as that of the Engaged Hostile modifier.
To-Be-Engaged Air Track-Ripple Fire*		Same as To-Be-Engaged Air Track except that more than one missile is to be used.

* - Used only with hostile and unknown track symbols.

TABLE II. Graphic Track Symbol Modifiers - (continued)

SYMBOL NAME	SYMBOL SHAPE	REMARKS
Fire Unit-Target Pairing		Used in fire distribution systems to designate assignment of a target to a fire unit/weapon system.
Speed/Heading Vectors*		Speed shall be indicated by up to three possible values: high, medium, low. As a minimum, heading should be indicatd as one of sixteen directions in 22.5 degree increments. A track having zero speed will not display a vector.
Low-speed Track with heading vector		One end of the vector shall start at 1/2 the distance from the symbol center and the other end extending beyond the symbol perimeter line by the length of the vector within the symbol.
Medium-speed Track with heading vector		One end of the vector shall start at 1/2 the distance from the symbol center and extend beyond the symbol perimeter line to a length equal to the total length of the low-speed vector line.
High-speed Track with heading vector		Vector extends from1/2 the distance from the symbol center and extends to a length outside the symbol perimeter the lengthe of the external low and medium vectors.
Predicated Intercept Point		Used only with missile/target pairing lines which are solid. Numerics give time to intercept in seconds.
Cover		Indicates that a cover command is imposed on the track by either automatic or operator action. Modifier size shall be the same as for the To-Be-Engaged Track modifier.

*These vectors apply to all Table I symbols.

TABLE II. Graphic Track Symbol Modifiers - (continued)

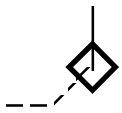
SYMBOL NAME	SYMBOL SHAPE	REMARKS
Cease Engage		Indicates that a cease engage status is imposed on the track the same as for the To-Be-Engaged Track modifier.
Engage Hold		Indicates that an automatic engagement is on-hold; used with ADA fire units which have an automatic engagement capability. Modifier size shall be the same as for the To-Be-Engaged Track modifier.
Hold Fire		Indicates that a hold fire status is imposed on the track by either automatic or operator action. Modifier size shall be the same as for the To-Be-Engaged Track modifier.
Cease Fire		Indicates that a cease fire status is imposed on the track by either automatic or operator action. Modifier size shall be the same as for the To-Be-Engaged Track modifier.
Launch-Now-Intercept Point		Depicted by an intercept point and connected to track symbol with a dashed (short dashes and spaces) line. Numerics show time to last launch in seconds. MSK (mask) shall be displayed when terrain affects the intercept.
Trails		Dashed (short dashes and spaces) straight-line segments extending from the current position of the track should be displayed to show track history. No more than 32 seconds of track history shall be displayed. Trails shall not be displayed when the launch-now-intercept point is displayed.

TABLE II. Graphic Track Symbol Modifiers - (continued)

SYMBOL NAME	SYMBOL SHAPE	REMARKS
Faker		Depicted by dashed line modifier as shown added above the basic hostile, unknown, and friend symbols to designate a particular track as a “Faker,” (e.g., a simulated track).
NCTR IFF Response		Depicted by an “N” modifier added to the interior of a basic track symbol to show that identification was made by a Non-cooperative Target Recognition Device.
Predicted Ground Impact Point		Used only with air-to-surface missile (shown in example) and tactical ballistic missile tracks. Numerics give time to impact in seconds. The line between the missile and predicted impact point is connected and decreases as the missile approaches the stationary impact point.
Probable Kill		This symbol appears at predicted intercept point and alternates at a 1 Hz rate with the engaged track symbol for up to 3 seconds after predicted intercept has occurred. For confirmed Kill, symbol shall not alternate and be constantly displayed.

TABLE III. Basic Landmark Symbols

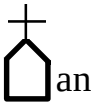
SYMBOL NAME	SYMBOL SHAPE
Building	
Church	
Tower	
Tree	
Mountain	
Bridge	
Storage Location	

TABLE IV. Special Symbols

SYMBOL NAME	SYMBOL SHAPE	REMARKS
Graphic Display Cursor		Operator controlled. Can move in two dimensions simultaneously. Cursor shall not blink. The major dimension of the cursor shall subtend from 12.8 to 14 mrad of visual arc at the operator's eye.
Pointer		A transmittable symbol under the direct control of the operator, used to point to displayed information, for highlighting or identifying areas of interest. Solid line structure. Length of pointer shall subtend 10 to 11 mrad of visual arc at the operator's eye. Optionally used as a graphic display cursor.
Tabular Display Cursor	UNDERLINE	Operator controlled cursor. Can move horizontally left and right, vertically up and down. Can not move diagonally. Solid line structure. Length shall subtend 7 to 8 mrad of visual arc at the operator's eye. Blinking is optional (2 Hz, if used). Used to denote present cursor position for entering text.
Special Status	S	Displayed within the hostile, unengageable unknown, or friend track symbol.
Jammer (ECM)		Solid line structure. Symbol shall blink at a 1 Hz rate with the hostile symbol when range is known. This blink rate means that the Hostile and Jammer symbols are alternatively displayed; ie.e., both symbols are never displayed simultaneously.
True Friend	T	Displayed within the friend symbol. Indicates an IFF Mode 4 response.

TABLE IV. Special Symbols - (continued)

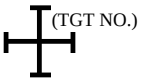
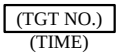
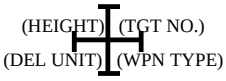
SYMBOL NAME	SYMBOL SHAPE	REMARKS
Assumed Friend	A	Displayed within the Unknown symbol. Shows a Mode 3 IFF response which correlates with an unknown symbol.
Jam Strobe		Solid line structure. Length to be either initializable or fixed by design. Display to indicate bearing of a jammer when range is known. The one end should extend to limits of the display to facilitate triangulation process.
Display Clutter		Short dash and dot parallel line structure. Length to be fixed by design.
Concentration Point		Used in ground fire planning by the Fire Support Node (Field Artillery)
Linear Concentration Line		
Rectangular Target		
Special Weapons Target		
Target Reference Point		

TABLE V. Basic Army Unit and Installation Symbols

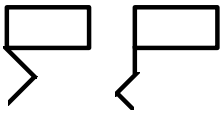
SYMBOL NAME	SYMBOL SHAPE	REMARKS
Army Unit		Unless otherwise stated, the exact location is indicated by the lower-left corner of the symbol.
Army Command Post (CP) or Headquarters		Location is indicated by the point of the shaft.
Army Unit or CP Offset Location		When necessary to offset the symbol from its current position, a location vector may be used. Also applies to installation symbols.
Army Unit or CP Projected Location		A broken line (short dashes and spaces) shall be used.
Army Installation (Logistic, Electronic, Administrative)		Unless otherwise stated, the exact location is indicated by the point of the short line. Line is always oriented 225 degrees clockwise from top of circle. Line length is fixed to the intersection of invisible vertical and horizontal lines which are tangent to the circle.
Army Installation Future or Projected Location		A broken line (short dashes and spaces) shall be used.
Hostile Army Unit		An alpha designator - H shall be used as the first character in field F - see Table V; it shall be continuously displayed with the unit symbol. If a color capability is provided, Red shall be used to indicate a Hostile (enemy) Unit along with the alpha.

TABLE V. Basic Army Unit and Installation Symbols
(continued)

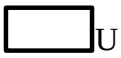
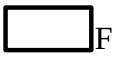
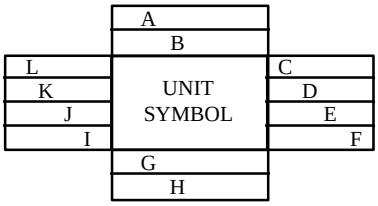
SYMBOL NAME	SYMBOL SHAPE	REMARKS
Unknown Army Unit		An alpha designator - U shall be used as the first character in field F - see Table V; it shall be continuously displayed with the unit symbol. If a color capability is provided, Yellow shall be used to indicate an Unknown Unit along with the alpha.
Friend Army Unit		An alpha designator - F shall be used as the first character in field F - see Table V; it shall be continously displayed with the unit symbol. If a color capability is provided, Green shall be used to indicate a Friendly Unit along with the alpha.
Hostile Army Installation		Same as Hostile Unit.
Unknown Army Installation		Same as Unknown Unit.
Friend Army Installation		Same as Friend Unit.

TABLE VI. Fields for Unit and Installation Symbols

12 fields (A through L) are shown on the following sketch.



Field

A Special Unit/Installation Size Modifier*
B Unit/Installation Size Modifier
C Unconfirmed Unit/Installation - Indicated by a Query Mark (?)
D Reinforced or Detached Modifier (+) or (-)
E Provides up to 4 kinds of information
- Free Text

or
- Combat Effectiveness - (CE--%)

or
- Evaluation Rating (Hostile Only) - (an)

or
- Signature Equipment (Hostile Only) - (!)

F Provides up to two kinds of Information
- Identification (H) or (U) or (F)**
- Higher Echelon Designators (Alphanumerics)

Note: An oblique stroke / shall be used between each designator.

G Command Post Designation (aaaa)
H Planned Direction of Movement Modifier ( )
I Unique Designation - Always used with size modifier
J Name of unit or Type of Equipment
K Date - Time Group - From nn nnnn a
L Date - Time Group - To nn nnn a

* Specific modifiers are listed in Table VII.
** Identification alpha shall always be displayed; H - Hostile, U - Unknown, F - Friend

Note: The fields described above shall be limited as follows:

• Above - No more than 2 fields with each field not exceeding 6 alphanumeric (AN) characters or equivalent modifiers.

• Right - No more than 4 fields with each field not exceeding 21 AN characters; more than one type of information may be included in each field provided that the maximum number of AN is not exceeded.

• Below - No more than 2 fields with each field not exceeding 6 AN characters plus an arrow (if required) to show planned direction of movement.

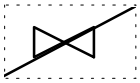
• Left - No more than 4 fields with each field not exceeding 15 AN characters.

The display and control design shall provide the operator with the capability of selecting and deselecting all and/or specific fields as required in order to reduce display clutter and present only timely and essential information. Only the alpha character for identification in field F shall be continuously displayed with the unit or installation symbol.

TABLE VII. Unit Modifiers for Field B

SIZE MODIFIER	GENERIC TERM
●	Team or Squad or Crew
●●	Section
●●●	Platoon or Detachment
I	Battery or Company or Troop
I I	Battalion or Squadron
I I I	Regiment or Group
X	Brigade
XX	Division
XXX	Corps
XXXX	Army
XXXXX	Army Group
XXXXXX	Region or Theatre Army
I̅I̅	Battalion Task Force (uses Fields A and B)
?	Unit Size Unknown

TABLE VIII. Army Unit Role Modifiers - *Organization Type

SYMBOL NAME	SYMBOL SHAPE	BFA**	REMARKS
Adjutant General Administrative		CSS	
Aerial Observation, Air Force		MVR	
Aerial Observation, Army		MVR	
Aero Scout		MVR	

*Note: A few role modifiers of other services are shown where there is need for joint interaction of systems; e.g. JSTARS.

**Primary Battlefield
Functional Area User and Other Users:

- A^2C^2 - Army Airspace Command and Control
- AD - Air Defense
- CSS - Combat Service Support
- ENG - Engineer Corps
- FS - Fire Support
- IEW - Intelligence/Electronic Warfare
- MVR - Maneuver Control
- NBC - Nuclear, Biological and Chemical
- SIG - Signal Corps

TABLE VIII. Army Unit Role Modifiers (continued)

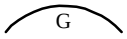
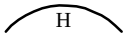
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Air Assault Aviation Unit		MVR	
Air Assault Infantry		MVR	
Air Assault, With Sufficient Aircraft		MVR	
Air Assault, Without Sufficient Aircraft		MVR	
Airborne		MVR	
Air Cavalry		MVR	
Air Defense Artillery Air Defense Anti-Aircraft		AD	
Air Defense, Air Assault Unit		AD	
Air Defense, Airborne Unit		AD	
Air Defense, Chaparral		AD	
Air Defense, Gun		AD	
Air Defense, Hawk		AD	

TABLE VIII. Army Unit Role Modifiers (continued)

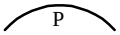
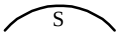
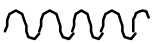
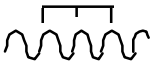
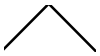
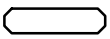
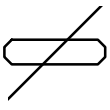
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Air Defense, Patriot		AD	
Air Defense, Stinger		AD	
Air Defense, Gun/ Stinger/Avenger		AD	
Air Defense, Vulcan		AD	
Air Defense, Vulcan/ Stinger		AD	
Amphibious		MVR	
Amphibious Engineers		ENG	
Antiarmor Antitank Anti-Tank		MVR	
Armor Tank Armored		MVR	
Armored Cavalry Reconnaissance, Armor		MVR	

TABLE VIII. Army Unit Role Modifiers (continued)

SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Army Aviation		MVR	
Helicopter		MVR	
Army Aviation (FW)		MVR	
Aviation, Combat		MVR	
Aviation, General Support		MVR	
Aviation Unit, Command		MVR	
Aviation Unit, Corps		MVR	
Aviation (Heavy Division)		MVR	
Aviation (Light Division)		MVR	
Aviation Intermediate Maintenance Unit		CSS	
Attack Helicopter		MVR	
Band	BAND	CSS	
Bridge		ENG	

TABLE VIII. Army Unit Role Modifiers (continued)

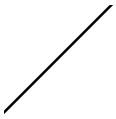
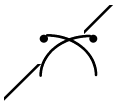
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Cavalry Reconnaissance		MRV	
Chemical		NBC	
Chemical Reconnaissance		NBC	
Chemical Decontamination		NBC	
Chemical Smoke Gen Unit		NBC	
Chemical Smoke and Decontamination Unit		NBC	
Civil Affairs	**CA**	CSS	
Combat Electronic Warfare Intelligence	**CEWI**	IEW	
CEWI, Air Assault Unit		IEW	
CEWI, Airborne Unit		IEW	
Combat Engineer		ENG	

TABLE VIII. Army Unit Role Modifiers (continued)

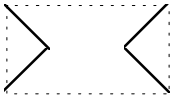
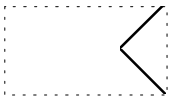
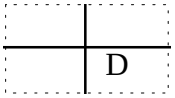
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
CSS Element, Theater Army		CSS	
CSS Element, Corps		CSS	
Data Processing Unit	**DPU**	CSS	
Dental		CSS	
EW Coordinator Electronic Warfare	**EW**	IEW	
Engineer		ENG	
Engineer, Air Assault Unit		ENG	
Engineer, Airborne Unit		ENG	
Engineer, Bridging		ENG	
Field Artillery, Air Assault Unit		FS	
Field Artillery, Airborne Unit		FS	

TABLE VIII. Army Unit Role Modifiers (continued)

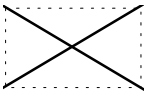
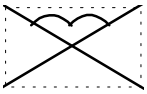
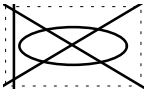
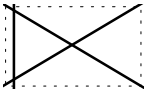
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Field Artillery, LANCE		FS	The PERSHING system is indicated by the letter P
Field Artillery Artillery Unit		FS	
Field Artillery, Tracked		FS	
Finance/Pay		CSS	
Infantry Rifle		MVR	
Airborne Infantry Paratroopers		MVR	
Infantry, BIFV		MVR	
Infantry on Foot Infantry, BIFV Dismounted		MVR	
Infantry, Light		MVR	

TABLE VIII. Army Unit Role Modifiers (continued)

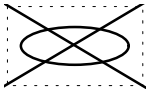
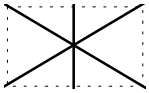
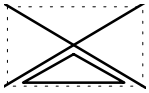
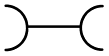
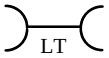
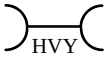
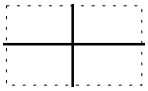
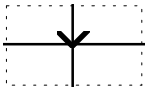
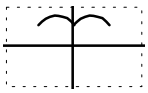
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Mechanized Infantry Combined Arms		MVR	
Motorized Rifle Troops		MVR	
Mountain Infantry		MVR	
Military Intelligence	**MI**	IEW	
Labor Resources	**LR**	CSS	
Maintenance		CSS	
Maintenance, Light		CSS	
Maintenance, Heavy		CSS	
Medical		CSS	
Medical, Air Assault Unit		CSS	
Medical, Airborne Unit		CSS	

TABLE VIII. Army Unit Role Modifiers (continued)

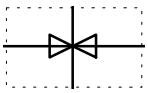
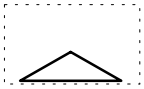
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Medical Air Evac Unit		CSS	
Military Police	**MP**	MVR	
Military Police, Air Assault Unit	**MP**	MVR	
Military Police, Airborne Unit	**MP**	MVR	
Mountain		MVR	
Operational Maneuver Group	**OMG**		Used only with Hostile Unit
Ordnance		CSS	
Petroleum Supply		CSS	
Psychological Operations		CSS	
Quartermaster		CSS	
Ranger	**RGR**	MVR	
Replacement/ Holding Unit	**RHU**	CSS	
Rocket Artillery Surface-To-Surface Rockets		FS	
Service	**SVC**	CSS	

TABLE VIII. Army Unit Role Modifiers (continued)

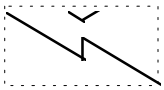
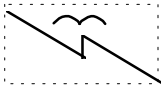
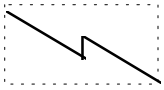
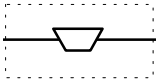
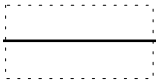
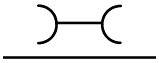
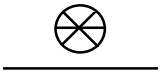
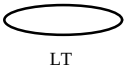
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Signal, Air Assault Unit		SIG	The symbols for tracked, wheeled and towed can be inserted below the basic symbol to show mobility type.
Signal, Airborne Unit		SIG	
Signal/Electronics Signals		SIG	
Sound Ranging		FS	
Special Forces	**SF**	MVR	
Supply		CSS	
Supply and Maintenance		CSS	
Supply and Transportation		CSS	
Support	**SPT**	CSS	
Support, Air Assault Unit	**SPT**	CSS	
Support, Airborne Unit	**SPT**	CSS	
Light Tank		MVR	
Medium Tank		MVR	

TABLE VIII. Army Unit Role Modifiers (continued)

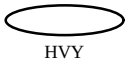
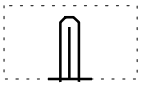
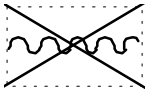
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Heavy Tank		MVR	
Surface-To-Air Missile		AD	
Surface-To-Surface Missile		FS	
Survey		FS	
Target Acquisition		FS	
Target Acquisition Recon Co		FS	
Topographic		ENG	
Transportation Transport		CSS	
Unmanned Air Vehicle (UAV) (Reconnaissance)		IEW	
USMC Marine Amphibious Unit Marine Amphibious Brigade Marine Amphibious Force		MVR	

TABLE VIII. Army Unit Role Modifiers (continued)

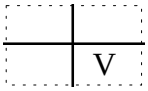
SYMBOL NAME	SYMBOL SHAPE	BFA
REMARKS		
Combat Type Unknown	**CBT UNK**	
Veterinary		CSS
Weather	**MET**	IEW
Unmanned Ground Vehicle (UGV) (Reconnaissance)		
Unmanned Surface Vessel (USV) (Reconnaissance)		
Unmanned Sub-surface Vessel (USSV) (Reconnaissance)		

TABLE IX. Army Installation Role Modifiers - Collecting Activity

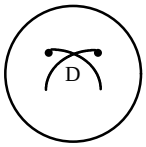
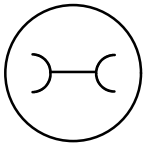
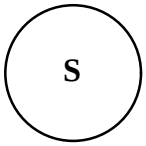
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Cannibalization Collection Point		CSS	
Civilian Collection Point		CSS	
Decontamination Point		CSS	
Maintenance Collection Point		CSS	
POW Collecting Point		CSS	
Salvage Point		CSS	
Stragglers		CSS	

TABLE X. Army Installation Role Modifiers - Electronic

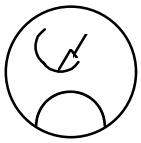
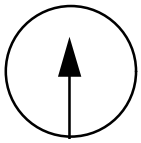
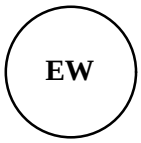
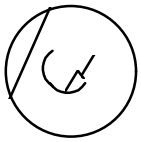
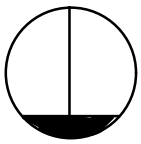
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Air Defense Radar		AD	
Artillery Locating Radar		FS	
Automatic Data Processing Central		CSS	
Data Distribution Center		SIG	
Direction Finding Station		IEW	
Dummy Radar Position		IEW	
Electronic Warfare Installation		IEW	
Ground Sensor/ Surveillance Radar		IEW	
Intercept Station		IEW	

TABLE X. Army Installation Role Modifiers - Electronic
(continued)

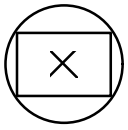
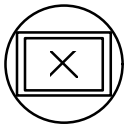
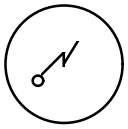
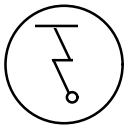
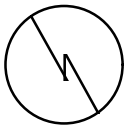
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Jamming Position		IEW	
MSE Node Center		SIG	
MSE Extension Node, Small		SIG	
MSE Extension Node, Large		SIG	
Radio Access Node		SIG	
Radio Relay Station Relay Point		SIG	
Radio/Wireless Station		SIG	
Signal Communications Center Communications Head Communications Node		SIG	

TABLE X. Army Installation Role Modifiers - Electronic
(continued)

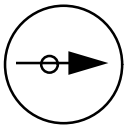
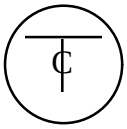
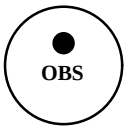
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Target Designator Radar		FS	
Telephone Center		SIG	
Teleprinter Center		SIG	
Observation Post		FS	

TABLE XI. Army Installation Role Modifiers - Logistic Supply

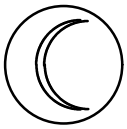
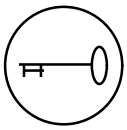
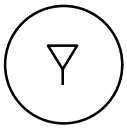
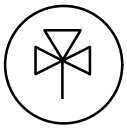
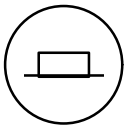
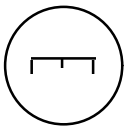
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Ration Point		CSS	
Class II - TOE		CSS	
POL Point POL Dump		CSS	
Airforce POL		CSS	
Fuel Handling Point, AVGAS		CSS	
Solid Fuel		CSS	
Class IV - Construction		CSS	
Aircraft Maintenance Point		CSS	

TABLE XI. Army Installation Role Modifiers - Logistic Supply
(continued)

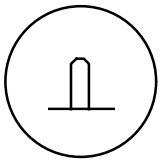
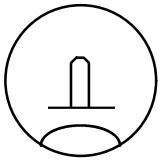
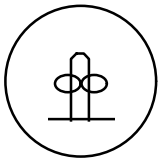
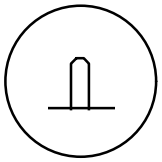
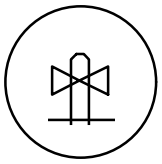
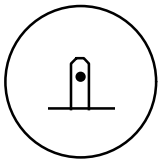
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Ammunition Supply Point		CSS	
Ammunition Air Defense		CSS	
Ammunition Air Force		CSS	
Ammunition Transfer Point		CSS	ATP
Ammunition Army Aviation		CSS	
Ammunition Artillery		CSS	

TABLE XI. Army Installation Role Modifiers - Logistic Supply
(continued)

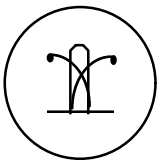
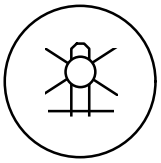
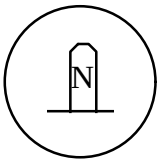
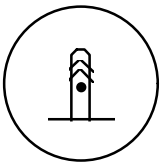
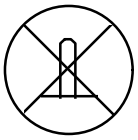
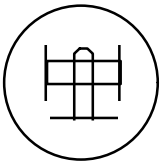
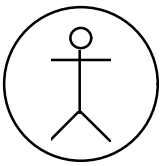
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Ammunition Chemical		CSS	
Ammunition Mines/ Explosives		CSS	
Supply Point, Special Ammunition		CSS	
Ammunition Rocket Artillery		CSS	
Ammunition Small Arms		CSS	
Ammunition Tank		CSS	
Class VI - Personal Demand		CSS	

TABLE XI. Army Installation Role Modifiers - Logistic Supply - (continued)

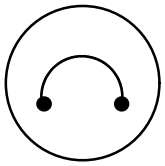
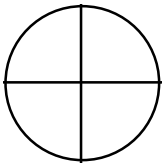
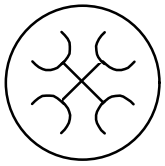
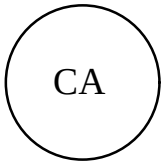
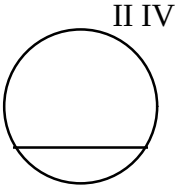
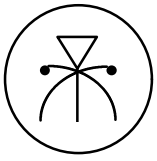
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Class VII - End Items		CSS	
Supply Point Medical		CSS	
Class IX - Repair Parts		CSS	
Class X - Civilian Affairs		CSS	
Supply Point, Bulk Supplies	II IV VX 	CSS	
POL Point, Chemical		CSS	

TABLE XI. Army Installation Role Modifiers - Logistic Supply - (continued)

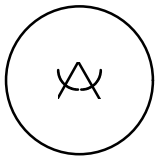
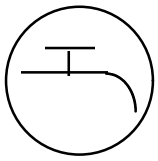
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Topographic (Map)		CSS	
Water Point		CSS	

TABLE XII. Army Installation Role Modifiers - Other Logistic

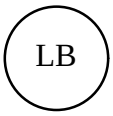
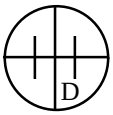
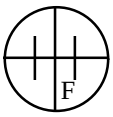
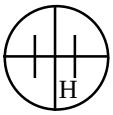
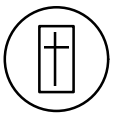
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Logistical Installation Logistic Base		CSS	
Bridge Park Vehicle Parking Space		CSS	
Bath Point		CSS	
Dressing Station		CSS	
Field Aid Station		CSS	
Field Hospital		CSS	
Graves Registration Point		CSS	
Material Management Center		CSS	

TABLE XII. Army Installation Role Modifiers - Other Logistic

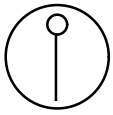
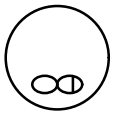
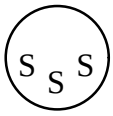
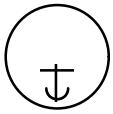
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Personnel Opns Center		CSS	
Traffic Control		CSS	
Air Force Logistical/ Administrative Installation		CSS	
Marine Corps Logistical/ Administrative Installation		CSS	
Navy Logistical/ Administrative Installation		CSS	

TABLE XIII. Control Measures - Ground Environment Control Points

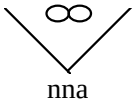
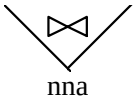
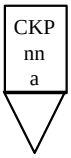
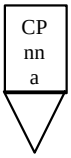
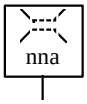
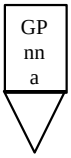
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Airbase		MVR	
Airstrip		MVR	
Check Point		MVR	nn = 01 thru 99 a = H (Hostile) or F (Friend) or U (Unknown)
Coordinating Point Coordination Point		MVR (FLCM)	
Contact Point Place of Contact		MVR	
Earthwork/Trench		MVR	
General, Unspecified Point		MVR	

TABLE XIII. Control Measures - Ground Environment Control Points - (continued)

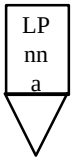
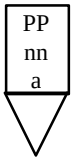
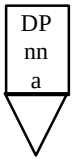
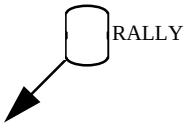
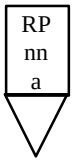
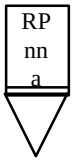
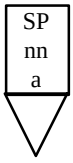
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Linkup Point		MVR	nn = 01 thru 99 a = H (Hostile) or F (Friend) or U (Unknown)
Passage Point		MVR	
Departure Point		MVR	
Rally Point		A2C2	
Rendezvous Point		A2C2	
Release Point		MVR	
Release Point (CSS)		CSS	
Start Point		MVR	

TABLE XIII. Control Measures - Ground Environment Control Points - (continued)

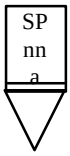
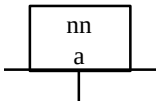
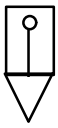
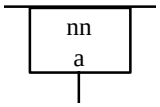
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Start Point (CSS)		CSS	
Surface Shelter		MVR	nn = 01 thru 99 a = H (Hostile) or F (Friend) or U (Unknown)
Traffic Control Point		CSS	
Underground Shelter		MVR	

TABLE XIV. Control Measures - Ground Environment Control Lines

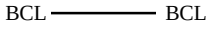
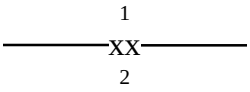
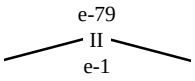
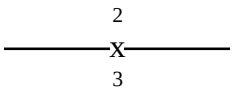
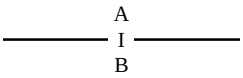
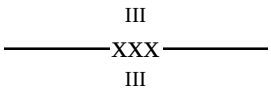
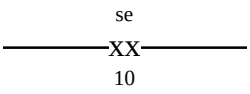
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Battlefield Coordination Line		MVR	
Boundary		MVR (FCLM)	
Battalion Boundary		MVR (FCLM)	
Brigade Boundary		MVR (FCLM)	
Company Boundary		MVR (FCLM)	
Corps Boundary		MVR (FCLM)	
Division Boundary		MVR (FCLM)	

TABLE XIV. Control Measures - Ground Environment Control Lines - (continued)

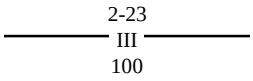
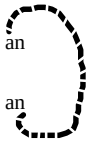
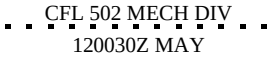
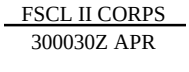
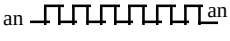
SYMBOL NAME REMARKS	SYMBOL SHAPE	BFA
Regimental Boundary		MVR (FCLM)
Boundary, Hostile		
Bridgehead Line		MVR (FCLM)
Coordinated Fire Line		FS
Final Coordination Line		MVR
Fire Support Coordination Line		FS
Fire Support Coordination Line, Hostile		
Fortified Line		MVR (FCLM)

TABLE XIV. Control Measures - Ground Environment Control Lines - (continued)

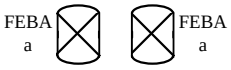
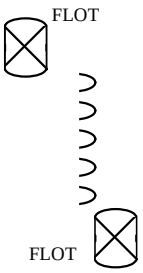
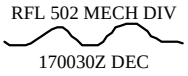
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Forward Edge Of The Battle Area Forward Edge of Battle Area		MVR (FCLM)	This FEBA symbol is depticted graphically by displaying a coordination point and the label “FEBA” at the first and last points of the FEBA location.
Trace, FEBA		MVR (FCLM)	Trace may be solid line (actual) or dashed line (planned).
Forward Line Of Own Troops		MVR (FCLM)	
Front Lines		MVR (FCLM)	
Restrictive Fire Line		FS	
Holding Line		MVR (FCLM)	

TABLE XIV. Control Measures - Ground Environment Control Lines - (continued)

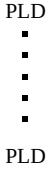
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Limit Of Advance		MVR	
Line Of Contact		MVR (FCLM)	
Line Of Departure		MVR	
Line Of Departure Is Line Of Contact		MVR	
Phase Line		MVR (FCLM)	
Probable Line Of Deployment		MVR	

TABLE XV. Control Measures - Ground Environment Control Areas

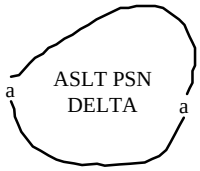
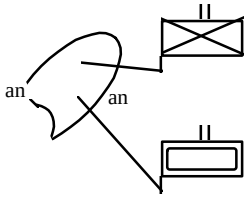
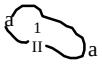
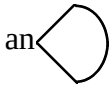
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Area		MVR	
Assault Postition		MVR	
Assembly Area Tactical Assembly Area		MVR	
Attack Position		MVR	
Battle Position		MVR	
Brigade Support Area		CSS	
Coverage Diagram, (FS) (IEW)		FS IEW	

TABLE XV. Control Measures - Ground Environment Control Areas
(continued)

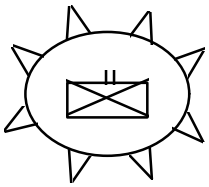
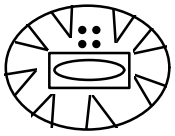
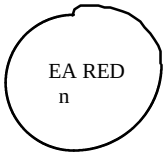
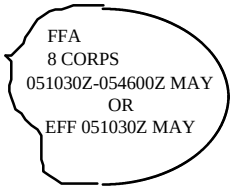
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Division Support Area		CSS	
Drop Zone		MVR	
Encirclement of Friendly Force		MVR	
Encirclement of Hostile Force		MVR	
Engagement Area		MVR	
Forward Area Rearming Refueling Point		CSS	
Free Fire Area		FS	
Landing Zone		MVR	

TABLE XV. Control Measures - Ground Environment Control Areas (continued)

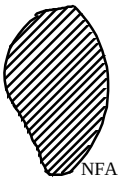
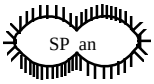
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Limited Access Area		MVR	Note: the alphanumerics identifying this symbol and ALL other symbols having a "name" or "number" identifier must be prescribed as "Name" or the "Location Identifier" in order to be displayed with the symbol.
Named Area Of Interest		IEW	
No Fire Area		FS	
Objective Intermediate Objective		MVR	
Pick Up Zone		MVR	
Restrictive Fire Area		FS	
Strongpoint		MVR	
TGT Area Of Interest		IEW	

TABLE XVI. Control Measures - Ground Environment Control Routes

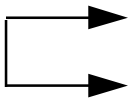
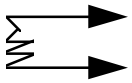
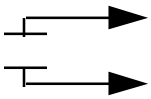
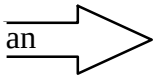
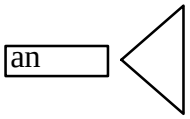
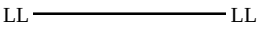
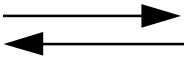
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Bypass (Easy) Bypass		MVR	
Bypass Difficult		MVR	
Bypass Impossible		MVR	
Convoy		CSS	
Convoy Halted		CSS	
Convoy Light Line		CSS	
Main Supply Route		CSS	
One Way Traffic		CSS	
Alternating One-Way Traffic		CSS	
Two Way Traffic		CSS	

TABLE XVII. Control Measures - Ground Environment Control Movements

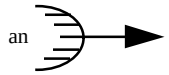
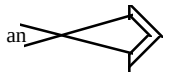
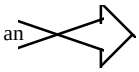
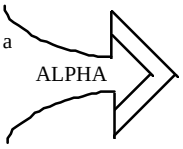
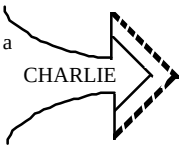
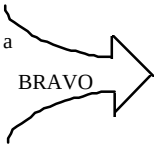
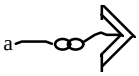
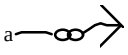
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Ambush		MVR	
Axis Of Advance, Air, Main Attack		MVR	
Axis Of Advance, Air, Supporting Attack		MVR	
Axis Of Advance, Main		MVR	
Axis Of Advance, Feint		MVR	
Axis Of Advance, Supporting		MVR	
Direction of Attack, Air, Main Attack		MVR	
Direction Of Attack, Air, Supporting Attack		MVR	

TABLE XVII. Control Measures - Ground Environment Control Movements (continued)

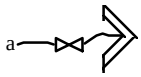
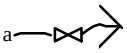
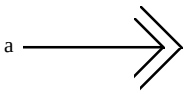
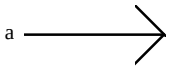
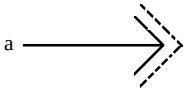
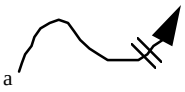
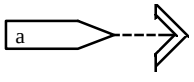
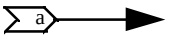
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Direction Of Attack, Army Air, Main		MVR	
Direction Of Attack, Army Air, Supporting		MVR	
Direction Of Attack		MVR	
Direction Of Attack, Supporting		MVR	
Direction Of Attack, Main Feint		MVR	
Delaying Action		MVR	
Follow and Assume Main Attack		MVR	
Follow and Support Mission		MVR	

TABLE XVII. Control Measures - Ground Environment Control Movements (continued)

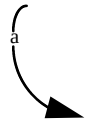
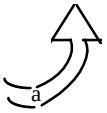
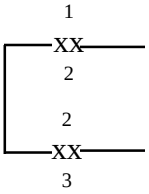
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Infiltration Lane		MVR	
Reconnaissance		MVR	
Screening		MVR	
Withdrawal		MVR	
Turning Movement		MVR	
Zone Of Action		MVR	"Sectors" can be reported as a multipoint battlefield geometry feature. However, they cannot be created from text message or in graphics as shown here. Instead, each boundary of the zone must be reported and, when displayed together, they form the "zone."

TABLE XVIII. Control Measures - Ground Environment Crossings

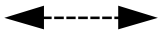
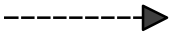
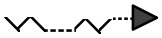
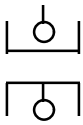
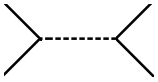
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Assault Crossing/ Crossing Site		ENG	
Bridge		ENG	
Ferry		ENG	
Ford		ENG	
Ford With Difficulty		ENG	
Minefield Gap		ENG	
Minefield Safe Lane		ENG	
Raft Site		ENG	

TABLE XIX. Control Measures - Ground Environment Obstacles
(Demolitions, Point and Linear)

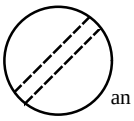
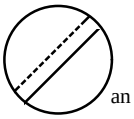
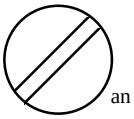
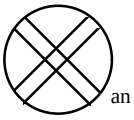
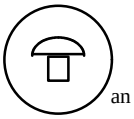
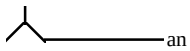
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Planned TGT Demo		ENG	
Demo, Prepared, State 1		ENG	
Demo, Prepared, State 2		ENG	
Demo, Fired		ENG	
Atomic Demo		ENG	
Abatis/Log Obstacle		ENG	
Booby Trap		ENG	
Nonexplosive Antitank		ENG	

TABLE XIX. Control Measures - Ground Environment Obstacles
(Demolitions, Point and Linear) - (continued)

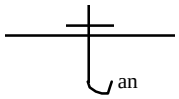
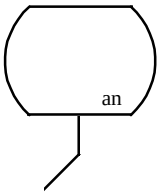
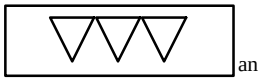
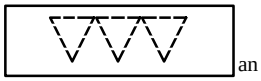
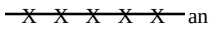
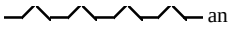
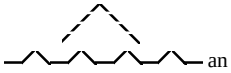
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Trip Wire		ENG	
Point Obstacle		ENG	
Ditch, Tank Anti-tank Ditch		ENG	
Anti-tank Ditch (Under Preparation)		ENG	
Barbed Wire		ENG	
Obstacle Line		ENG	
Dummy Obstacle		ENG	

TABLE XX. Control Measures - Air Environment Control Points

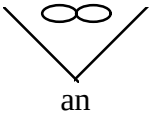
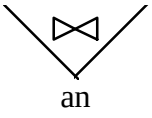
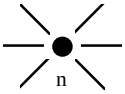
SYMBOL NAME REMARKS	SYMBOL SHAPE	BFA
Air Control Point		A2C2
Air Control Point, UAV		A2C2
Air Traffic Control Point		A2C2
Airbase		A2C2
Airstrip		A2C2
Beacon		A2C2
Contact Point (A2C2)		A2C2
Communications Control Point		A2C2

TABLE XX. Control Measures - Air Environment Control Points

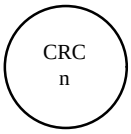
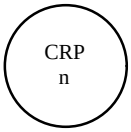
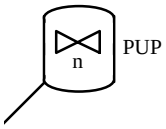
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Control And Reporting Center		A2C2	
Control And Reporting Post		A2C2	
Initial Point		A2C2	
Pop-up Point		A2C2	

TABLE XXI. Control Measures - Air Environment Control Lines

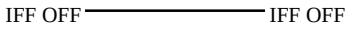
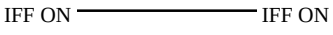
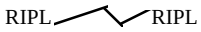
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
IFF Switch Off Line		A2C2	
IFF Switch On Line		A2C2	
Reconnaissance and Interdiction Planning Line		A2C2	

TABLE XXII. Control Measures - Air Environment Control Areas

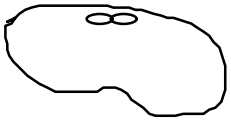
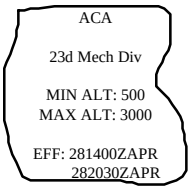
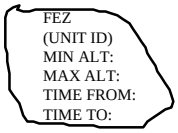
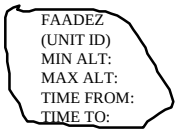
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Airfield Zone		A2C2	
Airspace Coordination Area		A2C2	
Air Defense Identification Zone		A2C2	
Base Defense Zone		A2C2	
Fighter Engagement Zone		A2C2	
Forward Area Air Defense Zone		A2C2	

TABLE XXII. Control Measures - Air Environment Control Areas (continued)

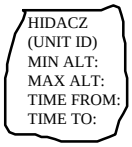
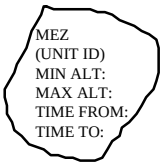
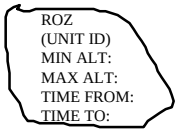
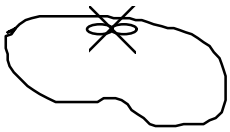
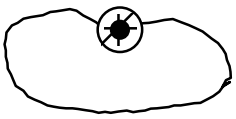
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
High Density Airspace Control Zone		A2C2	
Missile Engagement Zone		A2C2	
Restricted Operations Zone		A2C2	
Shorad Zone		A2C2	
Vulnerable Area		A2C2	
Weapons Free Zone		A2C2	

TABLE XXII. Control Measures - Air Environment Control Areas (continued)

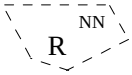
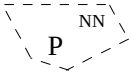
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Combined Weapon Control Identification Origin Volume		AD	Long dash and dot segments. The right Alpha character shall be either H (hold), F (free), or T (tight). the numerics shall be used when more than one volume exists with the same weapon control status, e.g., 01H, 02H, and 03H. *The bottom letter shall designate fixed wing, “F”, rotary wing “R”, or both if there is no letter present. *The left Alpha character if required, shall be either H (hostile) or F (friend) to show a Combined Identificaiton Origin and Weapon Control status.
Track Origin Volume		AD	Short dash and long space segments. Alpha character shall be either H or F for hostile or friendly origins. The numberics shall be used when more than one origin exists.
Restricted Volumes		AD	Short dashes and spaces. “R” shall always be present and numerics to be used if more than one exists.
Prohibited Volumes		AD	Short dashes and spaces. “P” shall always be present and numerics to be used if more than one exists.

TABLE XXIII. Control Measures - Air Environment Control Routes

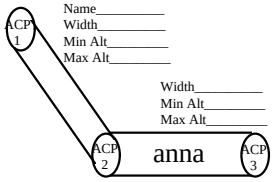
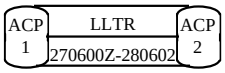
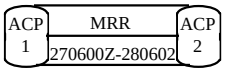
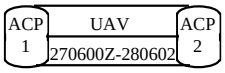
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Air Corridor Combined Volume and Safe Passage Corridor		A2C2	ACPs and CCPs must be reported as separate A2C2 control measures. Name, Width, MinAlt, and MaxAlt will be displayed with each corridor as shown. Parallel solid or short dash and space lien segments. For on-way corridors, an arrow shall be used on both lines to show direction. The 1st Alpha is an F, which indicates a safe area for friendly aircraft. The numberics shall be used when more than one corridor exists and the other Alpha character shall be H (hold), F (fire), or T (tight) if weapon control status is required.
Low Level Transit Route		A2C2	
Minimum Risk Route		A2C2	
Unmanned Air Vehicle Route		A2C2	

TABLE XXIII. Control Measures - Air Environment Control Routes (continued)

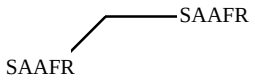
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Standard Army Aircraft Flight Route		A2C2	
Temporary Minimum Risk Route		A2C2	

TABLE XXIV. Special - Mines and Minefields

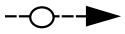
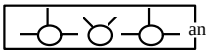
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Antipersonnel Mine		ENG	
Antitank Mine		ENG	
Antitank Mine With Antihandling Device		ENG	
Directional Mine		ENG	Arrow points toward area of main effect.
Mine Cluster Showing Personnel Mines		ENG	Rounded side points toward area of main effect.
Mine; Type Unspecified		ENG	
Tactical Minefield (With AP Mines)		ENG	If geographic location is a single point, one fixed size symbol will be centered at that point and will be rotatable; if location is multiple points, symbol will be drawn to connect points and will not be rotatable.
Tactical Minefield (With AP/AT Mines)		ENG	

TABLE XXIV. Special - Mines and Minefields (continued)

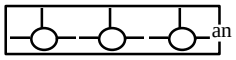
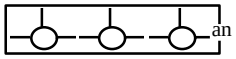
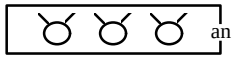
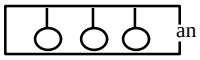
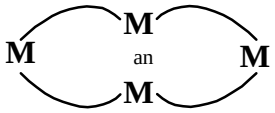
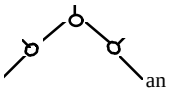
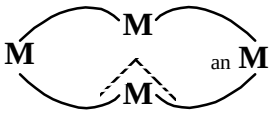
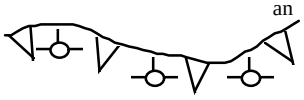
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Tactical Minefield (With AT Mines)		ENG	
Tactical Minefield (With Scatterable AT Mines)	S  DTG	ENG	
Tactical Minefield (With Scatterable AP Mines)	S  DTG	ENG	
Tactical Minefield		ENG	
Nuisance Mined Area		ENG	
Protective		ENG	
Phoney		ENG	
Anti-tank Ditch With Anti-tank Mines		ENG	

TABLE XXIV. Special - Mines and Minefields (continued)

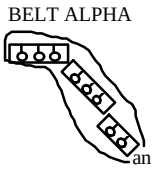
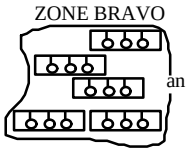
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Minefield Belt		ENG	Minefields within a "Minefield Belt" or "Minefield Zone" must be defined individually using appropriate message sets/fields or graphic edit functionality. Belts encompass two or more minefields.
Minefield Zone		ENG	Minefield Zones encompass two or more minefields or minefield belts, each of which must be defined as described in above remark.

TABLE XXV. Special - NBC

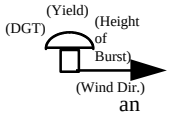
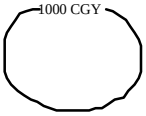
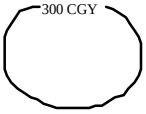
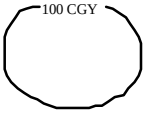
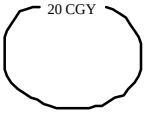
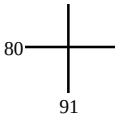
SYMBOL NAME	SYMBOL SHAPE	BFA	REMARKS
Nuclear Report Nuclear Navy Report	 an	NBC	Nuclear explosion symbology will be shown as illustrated here, in yellow
Nuclear Report/With Fallout		NBC	
NBC Effects/1000 CGY Line		NBC	The coordinates identified in set UNIFORM will define this effects line.
NBC Effects/300 CGY Line		NBC	The coordinates identified in set VICTOR will define this effects line.
NBC Effects/100 CGY Line		NBC	The coordinates identified in set WHISKY will define this effects line.
NBC Effects/20 CGY Line		NBC	The coordinates identified in set XRAY will define this effects line.
Wind Direction		None	
Map Reference Point		None	

TABLE XXV. Special - NBC (continued)

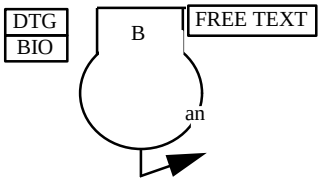
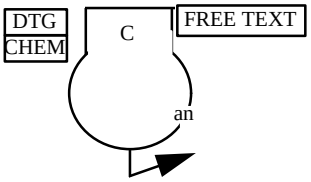
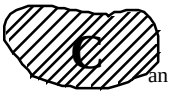
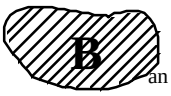
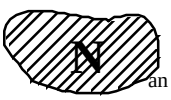
SYMBOL NAME REMARKS	SYMBOL SHAPE	BFA
Biological Report Biological Navy Report		NBC
Chemical Report Chemical Navy Report		NBC
Contamination, Chemical Chemical Chemical Hazardous Area		NBC
Contamination, Biological		NBC
Contamination, Nuclear		NBC
Smoke Area		NBC

TABLE XXVI. Equipment - Aircraft in Non-Track Status

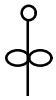
SYMBOL NAME	SYMBOL SHAPE	
	Army	Air Force
Fixed Wing (FW)		
Rotary Wing (RW)		
Remotely Piloted Vehicle (RW)		
Remotely Piloted Vehicle (FW)		
Rotary Wing - Attack		(Not Used)
Rotary Wing - Reconnaissance		(Not Used)
Rotary Wing - Transport/Lift		
Light		
Medium		
Heavy		
Fighter (FW)	(Not Used)	
Bomber (FW)	(Not Used)	
Fixed Wing - Transport/Light		
Light		
Medium		
Heavy		
Fixed Wing - Reconnaissance		

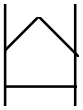
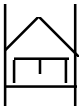
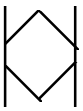
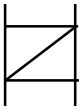
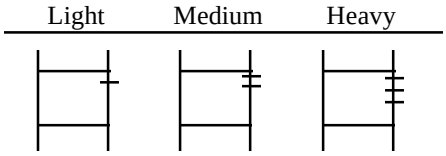
TABLE XXVII. Equipment - Weapons in Non-Track Status

SYMBOL NAME	SYMBOL SHAPE			
	General	Light	Medium	Heavy
Gun				
Howitzer				
Mortar				
Machine Gun/Automatic Wpn				
Antitank Gun				
Rocket Launcher				
Antitank Rocket Launcher				
Multibarrel Rocket Launcher				
Air Defense Gun				
Air Defense Gun (Self Propelled)				
Howitzer (Self Propelled)				

TABLE XXVII. Equipment - Weapons in Non-Track Status (continued)

SYMBOL NAME	SYMBOL SHAPE			
	General	Light	Medium	Heavy
Missile				
Antitank Missile				
Antitank Missile (Self Propelled)				
Air Defense Missile				
Tactical Ballistic Missile				
Flame Thrower		 portable	 vehicular	

TABLE XXVIII. Equipment - Vehicles in Non-Track Status

SYMBOL NAME	SYMBOL SHAPE
Armored Personnel Carrier	
Armored Engineer Vehicle	
Armored Vehicle Launch Bridge (AVLB)	
Bradely Infantry Frighting Vehicle (BIFV)*	
Cavalry Fighting Vehicle (CFV)	
Tank **	
Multipurpose Engineer Tractor	
High Mobility Vehicle	

*Note: As shown in Table VIII, the Bradley Infantry Fighting Vehicle (BIFV) symbol may also be shown within the Infantry Unit symbol by using a vertical line modifier.

**Note: As shown in Table VIII, the tank symbol may also be shown within the Unit symbol by using the armor/tracked vehicle modifier symbol with the abbreviations of LT, MED and HVY for tank size.

TABLE XXIX. Equipment - Surface and Subsurface Vehicles in Non-Track Status

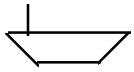
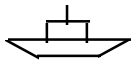
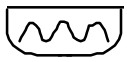
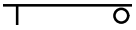
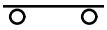
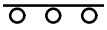
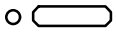
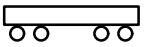
SYMBOL NAME	SYMBOL SHAPE
Naval Ship (Size Unspecified)	
Submarine (Size Unspecified)	
Hover Craft (Size Unspecified)	
Amphibious (Cargo)	

TABLE XXX. Equipment - Vehicle Mobility Modifiers in Non-Track Status

SYMBOL NAME	SYMBOL SHAPE
Amphibious	
Over-Snow	
Towed Vehicle or Trailer	
Tracked/Self Propelled*	
Wheeled	
Wheeled Cross-Country	
Wheeled/Tracked Combination	
Railway	

*Note: A tracked modifier used within a unit symbol is an armored unit having tanks or Bradley Infantry Fighting Vehicles.

CONCLUDING MATERIAL

Custodian:
Army - MI

Preparing activity:
Army - MI
(Project HFAC-A026)

Review activities:
Army - AV, CE, CR, ER, MDI, SC, TE